

Investigation of Lightning as an Alternative Source of Energy

Tracy Barnes¹ and Emmanuel S. Eneyo²

¹Department of Electrical and Computer Engineering

²Department of Mechanical and Industrial Engineering
Southern Illinois University at Edwardsville
Edwardsville, Illinois 62026

ABSTRACT:

Spectacular, powerful, and sometimes deadly, lightning is one of the most common weather phenomena. It has been estimated that lightning strikes the earth about 100 times every second. Lightning has also been observed on the planets Venus, Jupiter, and Saturn. Yet despite its frequent occurrence, lightning is still not completely understood.

Beyond its powerful beauty, lightning presents science with one of its greatest local mysteries: How does it work? It is common knowledge that lightning is generated in electrically charged storm systems, but the method of cloud charging still remains elusive. This research effort is an attempt to investigate the natural phenomenon of lightning, the energy that it possesses, and the possibilities of harnessing its power, and using it as an energy source. To understand lightning, it helps to learn a little about electricity. After all, lightning is a form of electricity. A quick way to learn about electricity is to learn about static electricity. Lightning is like static electricity, except on a much bigger scale. Both lightning and static electricity happen because of the attraction between opposite charges. This analogy between static electricity and lightning will be examined.

Submitted for presentation at the 7th Annual Illinois LS-AMP Student Research Symposium In Science, technology, Engineering and Mathematics, Chicago, Illinois, April 16-17, 2004.